

NMCOG

Greater Lowell Bicycle and Pedestrian Plan

Network Evaluation Public Workshop



TOOLE
DESIGN

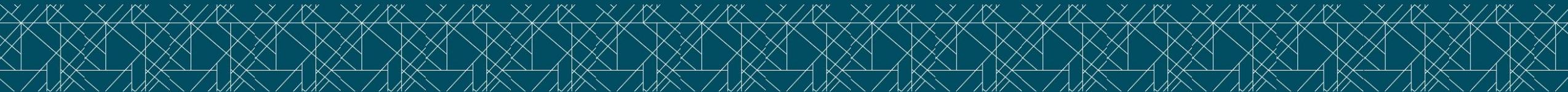
Agenda

1. Welcome Introductions (5 min)
2. Project Overview and Updates (10 min)
3. Presentation: Draft Regional Bicycle & Pedestrian Network (15 min)
4. Interactive Breakout Discussions (25 min)
5. Group Report-Back and Discussion (25 min)
6. Wrap-Up and Next Steps (10 min)



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Draft Regional Bicycle & Pedestrian Network



Setting the Foundation



Vision & Goals

Vision

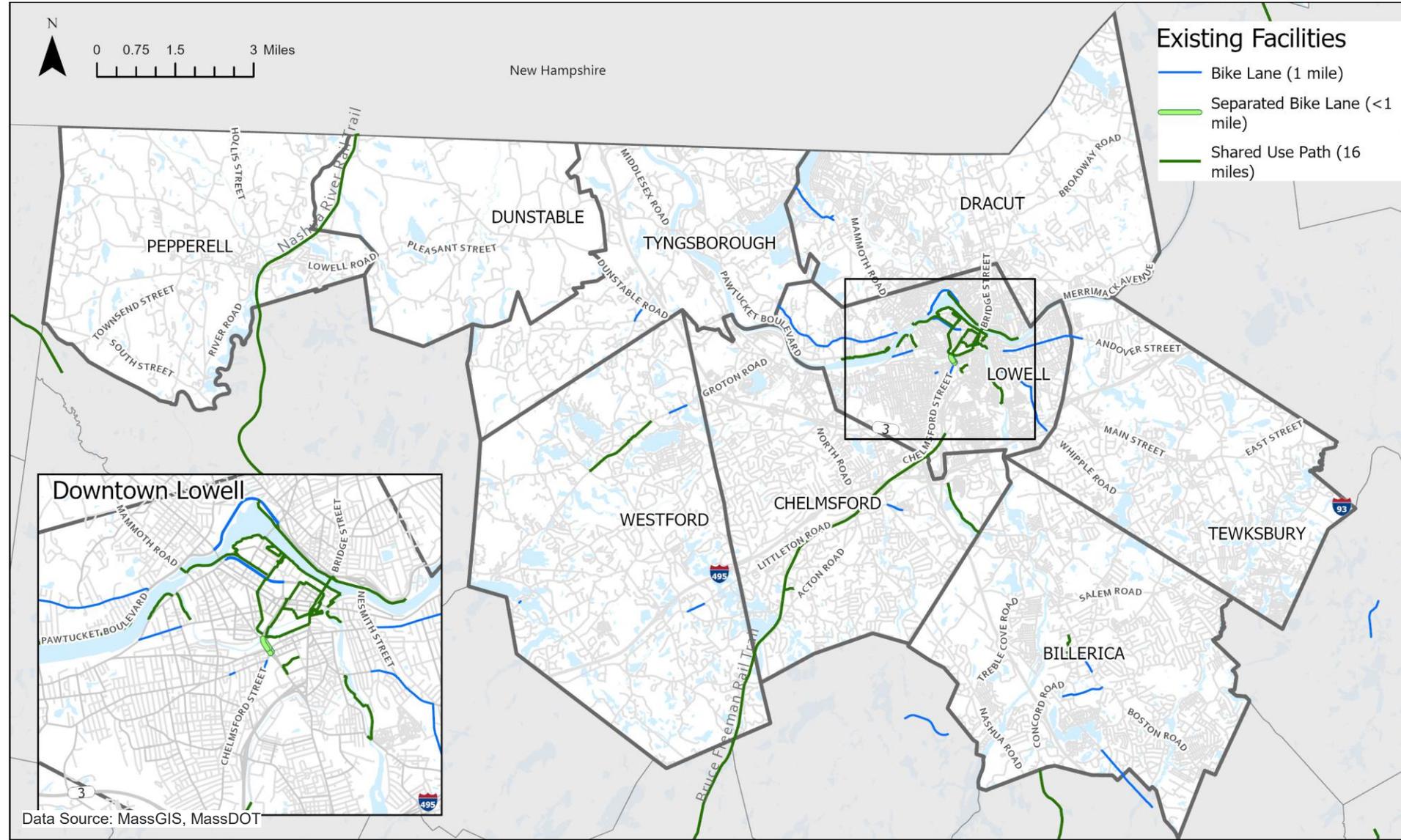
The Northern Middlesex region is a cohesive region where people walking, rolling, bicycling, wheeling, and taking transit feel **safe** and **comfortable** across the region's nine municipalities. People using **active modes** of transportation **for travel and for recreation** is the norm in the region, and more people choose active modes.

Goals

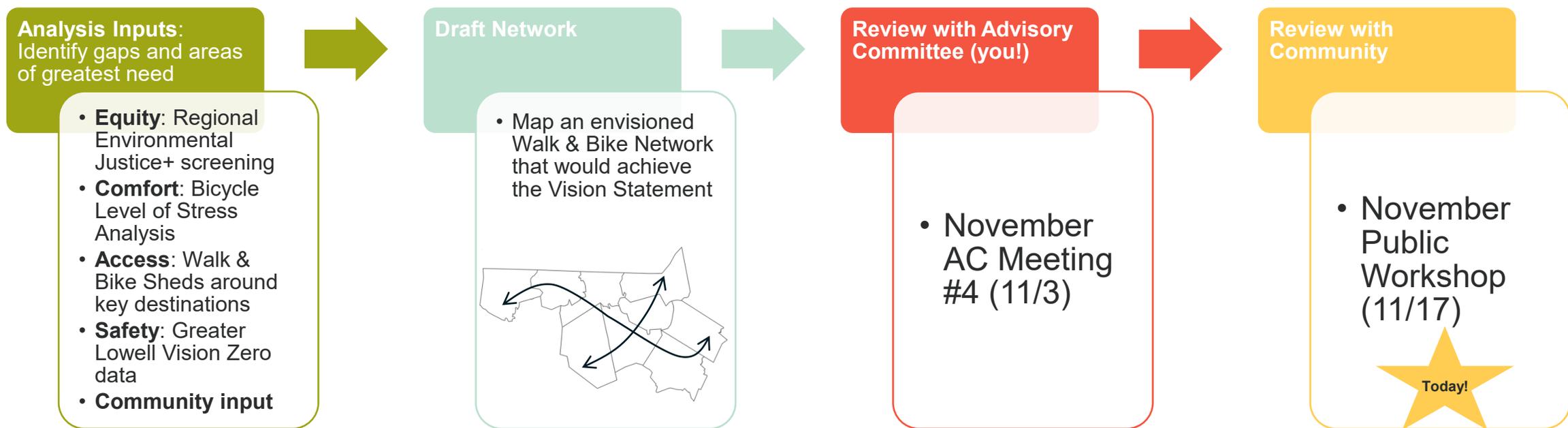
1. Develop a cohesive and connected network
2. Promote safe and comfortable facilities
3. Increase walking and bicycling for both recreational and utility purposes
4. Ensure equitable and accessible access to active transportation and transit facilities
5. Educate the region on safety practices for walking and bicycling
6. Support and enhance housing and economic development in town/city centers

Existing Bicycle Infrastructure

- 16 miles of off-street and shared use paths form the backbone
- Only a few miles of on-street bicycle facilities



Developing a Draft Walk & Bike Network

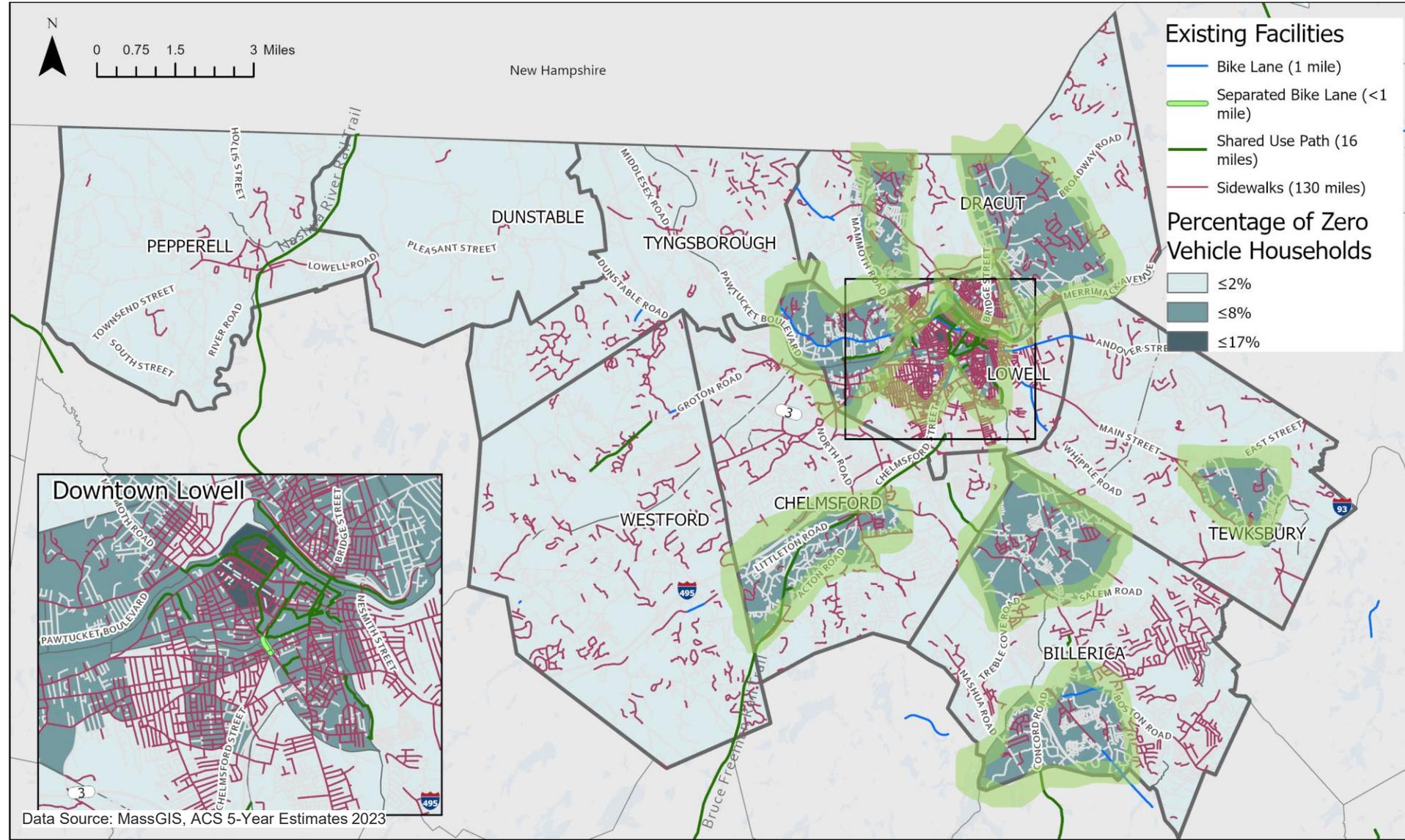


Equity



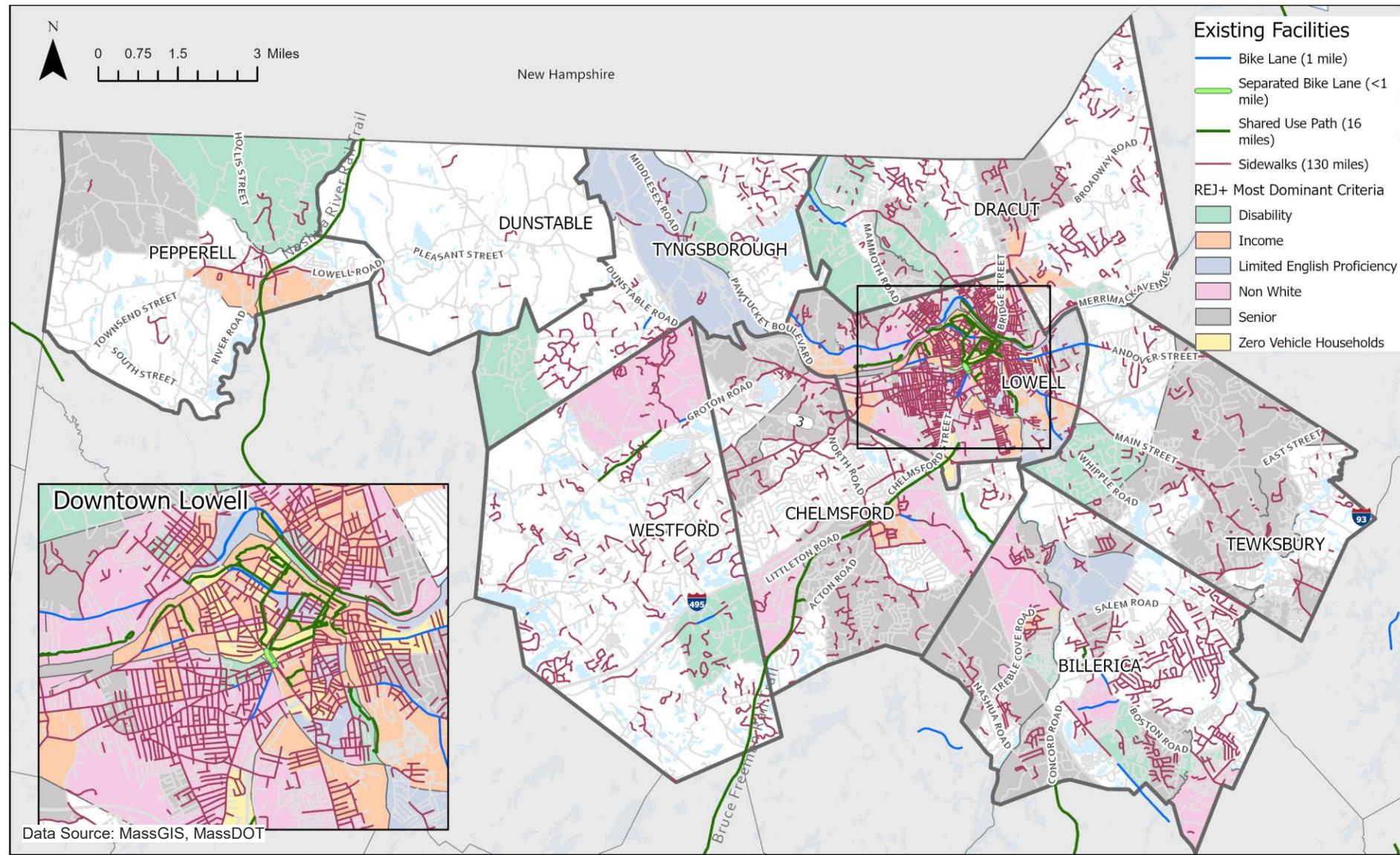
Zero Vehicle Car Households

- 7% of households – 8,000 households – in the region do not have any vehicles



Regional Environmental Justice Plus (REJ+) Index

- Most dominant criteria is senior with 20% of the region meeting this criteria
- Second most dominant factor is disability, accounting for 10% of the region



Data Source: MassGIS, MassDOT

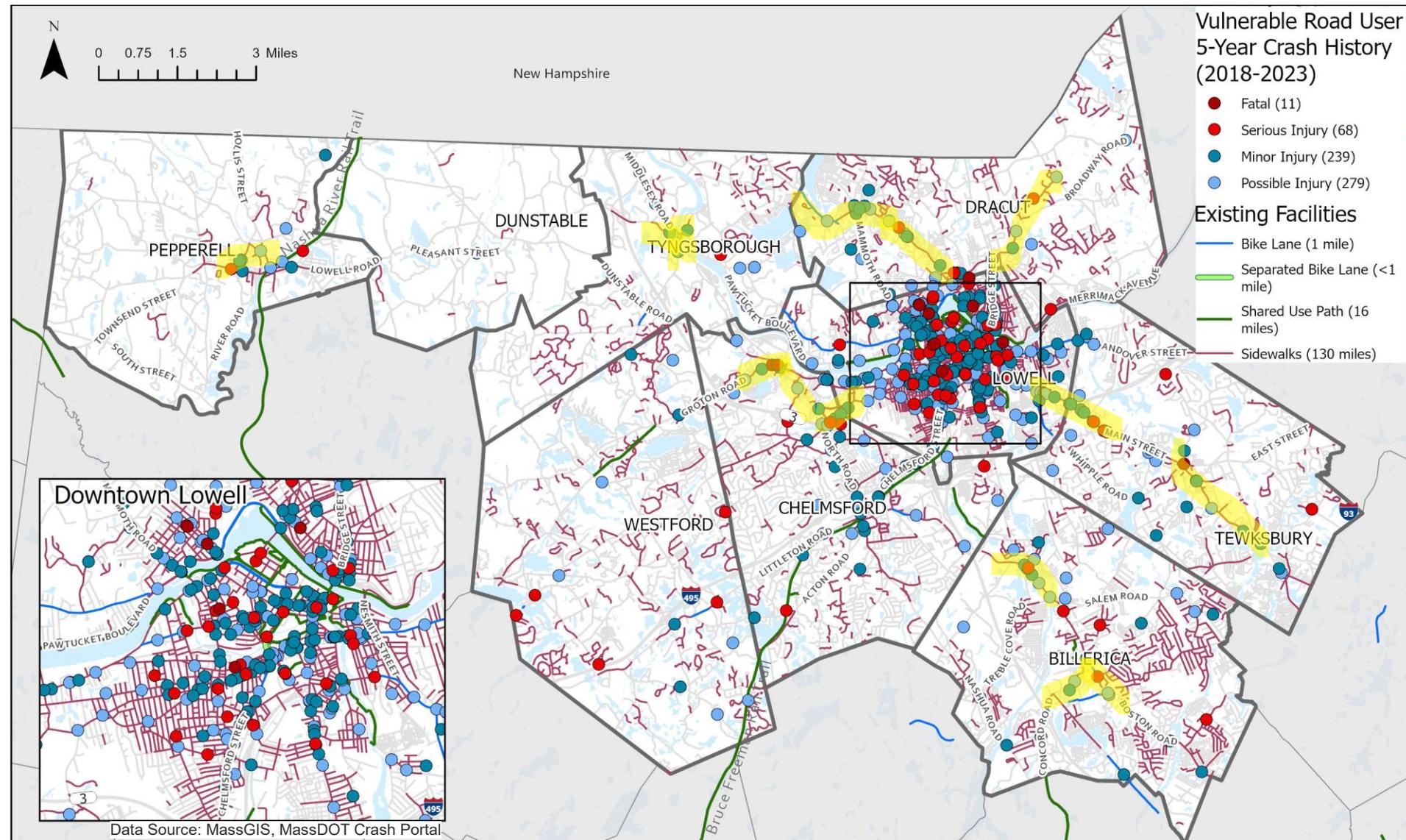
Safety



All Vulnerable Road User (VRU) Injury Crashes (2018-2023)

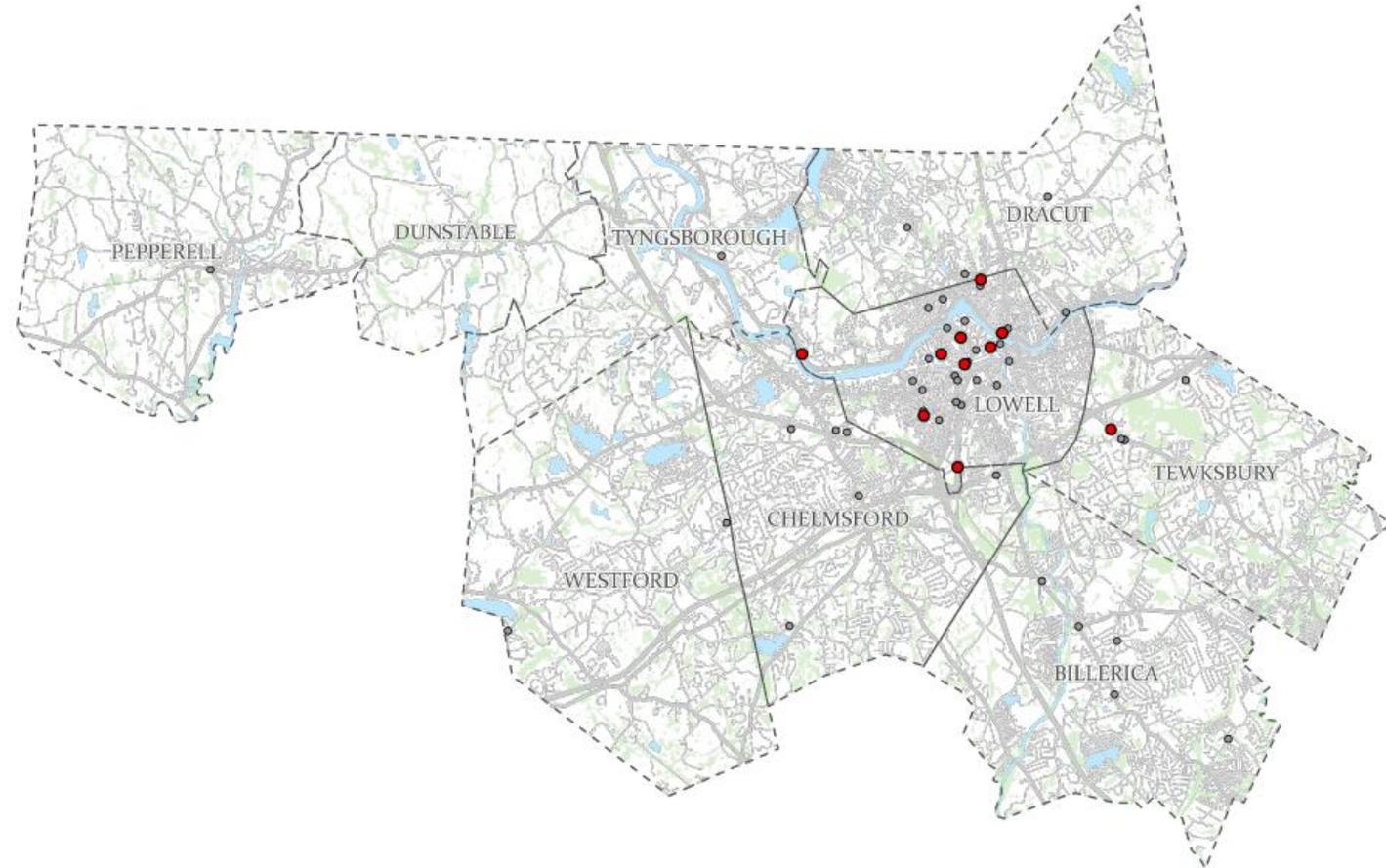
Key corridors crashes involving people walking and bicycling

VRU = someone walking or bicycling or otherwise not travelling within a vehicle



Pedestrian Involved Fatal and Serious Injury (KSI) Crashes (2018-2023)

- All but one fatal crashes involving a pedestrian occurred in Lowell
- One occurred in Tewksbury
- Serious injury crashes occurred in Pepperell, Tyngsborough, Dracut, Lowell, Tewksbury, Billerica, Chelmsford, and Westford



Pedestrian-Involved KSI Crashes

- Fatal Crash (10)
- Serious Injury Crash (47)



Bicycle Involved Fatal and Serious Injury (KSI) Crashes (2018-2023)

- One fatal crash occurred in Westford
- Serious injury crashes occurred in Pepperell, Westford, and Lowell



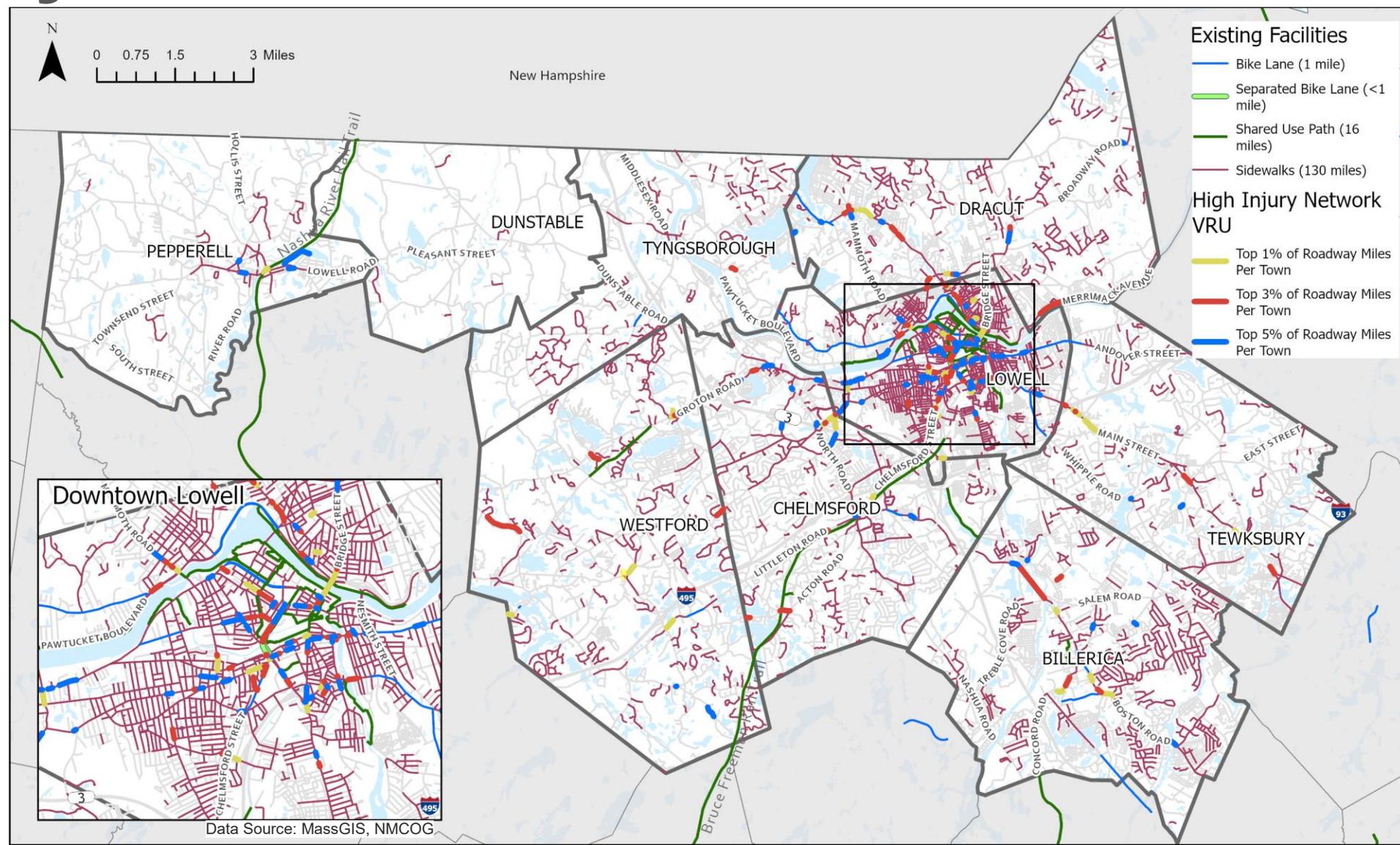
Bicycle-Involved KSI Crashes

- Fatal Crash (1)
- Serious Injury Crash (14)



High Injury Network

- The Greater Lowell Vision Zero Plan developed a High Injury Network
- *This maps includes only segments of the HIN where VRU crashes occurred*



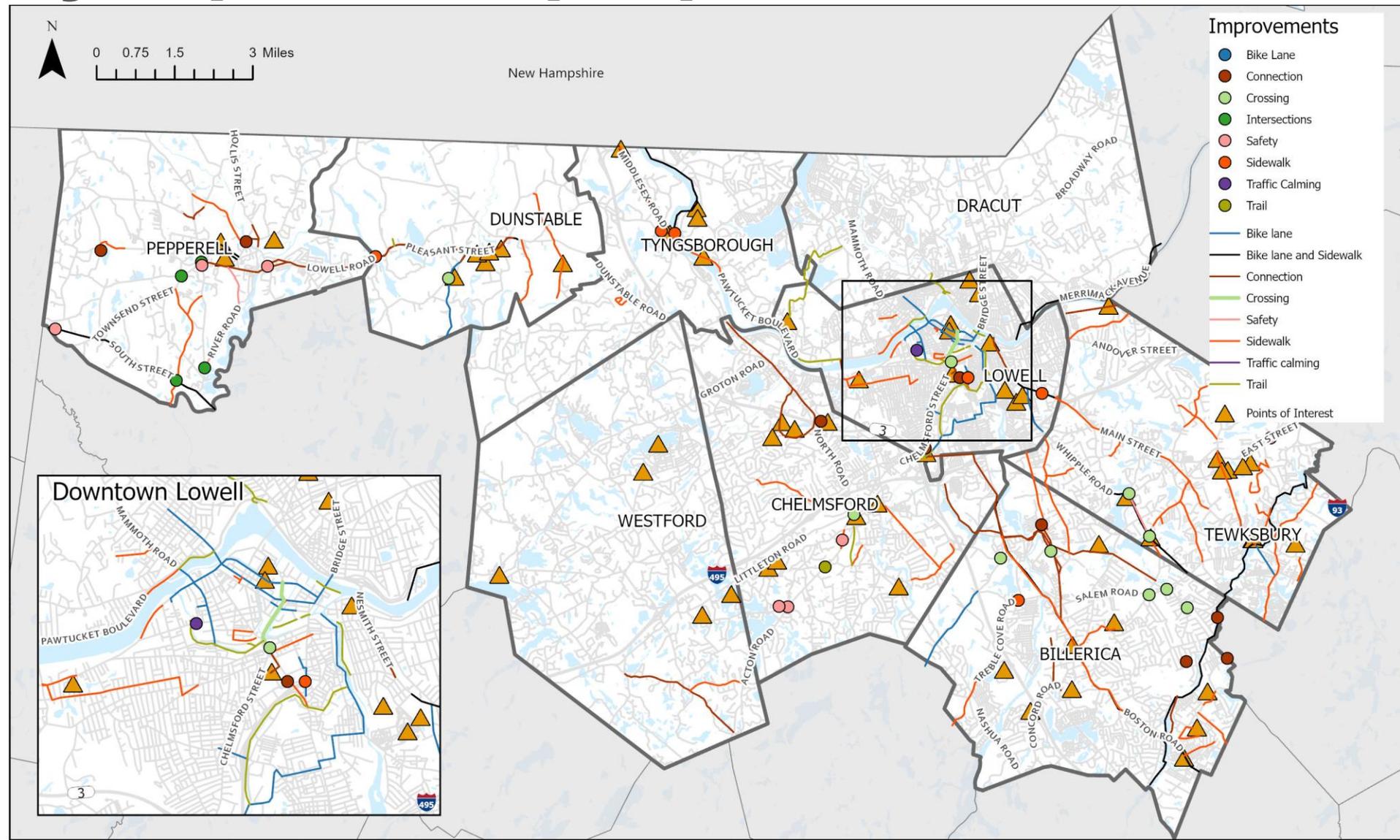
Community Engagement



Community Input – Pop-up

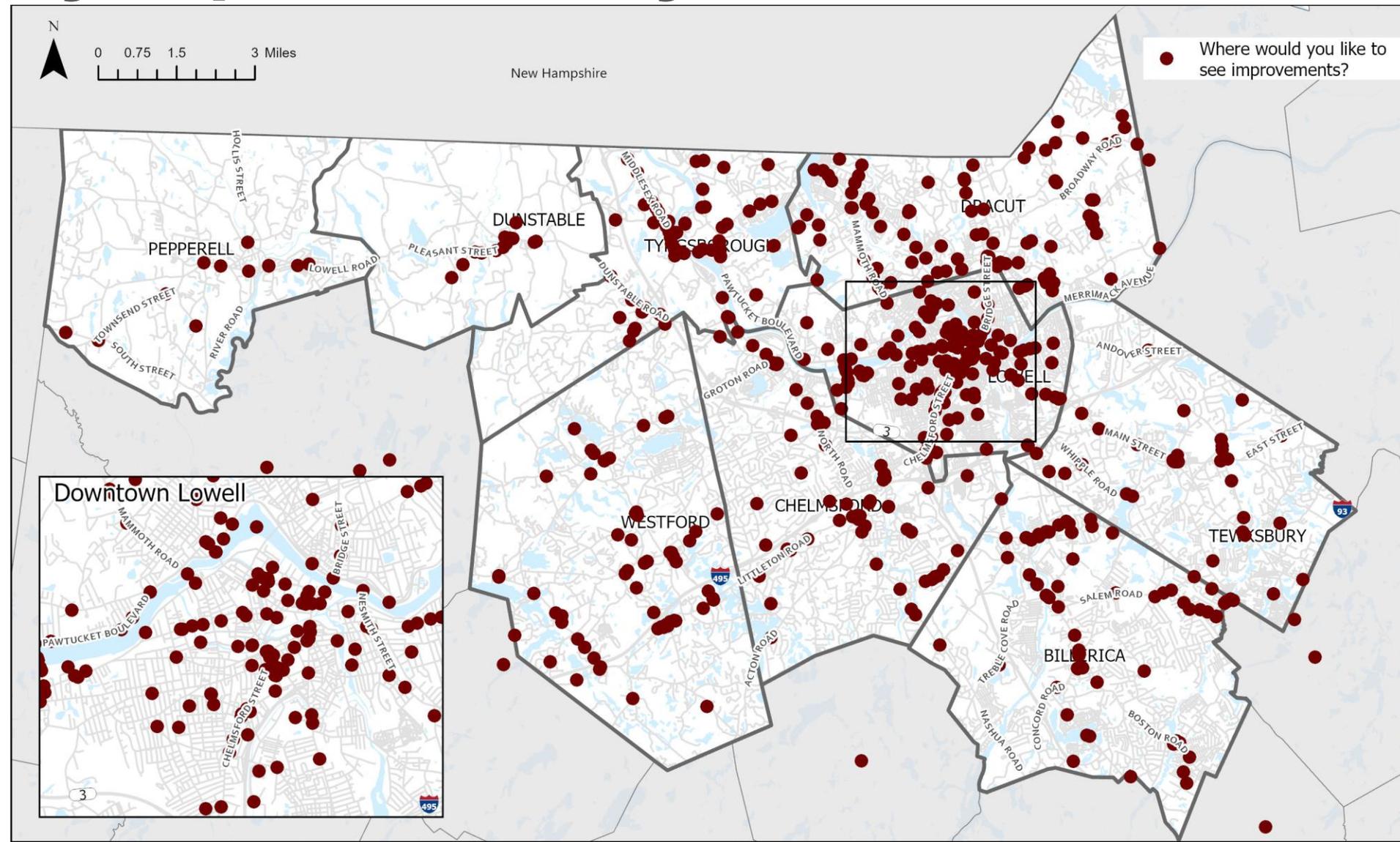
Participants at the pop-ups highlighted locations of adding:

- **Crossings** for bicycles and pedestrians (78 locations and corridors)
- **Improved connections** to downtown centers and trails (60 locations and corridors)
- **Sidewalks** (114 locations and segments)
- **Bike lanes** (58 segments)
- **Points of interest** (126 locations) which included schools, apartments, parks and recreation centers, trails, and shopping destinations



Community Input - Survey

Over 724 points showed locations of improvement for bicycle and pedestrian infrastructure



Comfort



Bicyclist Comfort- Level of Traffic Stress

The LTS score is based on:

- Posted Speed Limit
- Annual Average Daily Traffic (AADT)
- Number of lanes
- Presence of a marked centerline

Data inputs for all streets in the NMCOG region is sourced from MassGIS.

The goal is to highlight where **interested but concerned** bicyclists would and would not feel comfortable riding.

BICYCLIST DESIGN USER PROFILES

Interested but Concerned

51%-56% of the total population

Often not comfortable with bike lanes, may bike on sidewalks even if bike lanes are provided; prefer off-street or separated bicycle facilities or quiet or traffic-calmed residential roads. May not bike at all if bicycle facilities do not meet needs for perceived comfort.

Somewhat Confident

5-9% of the total population

Generally prefer more separated facilities, but are comfortable riding in bicycle lanes or on paved shoulders if need be.

Highly Confident

4-7% of the total population

Comfortable riding with traffic; will use roads without bike lanes.



LOW STRESS TOLERANCE

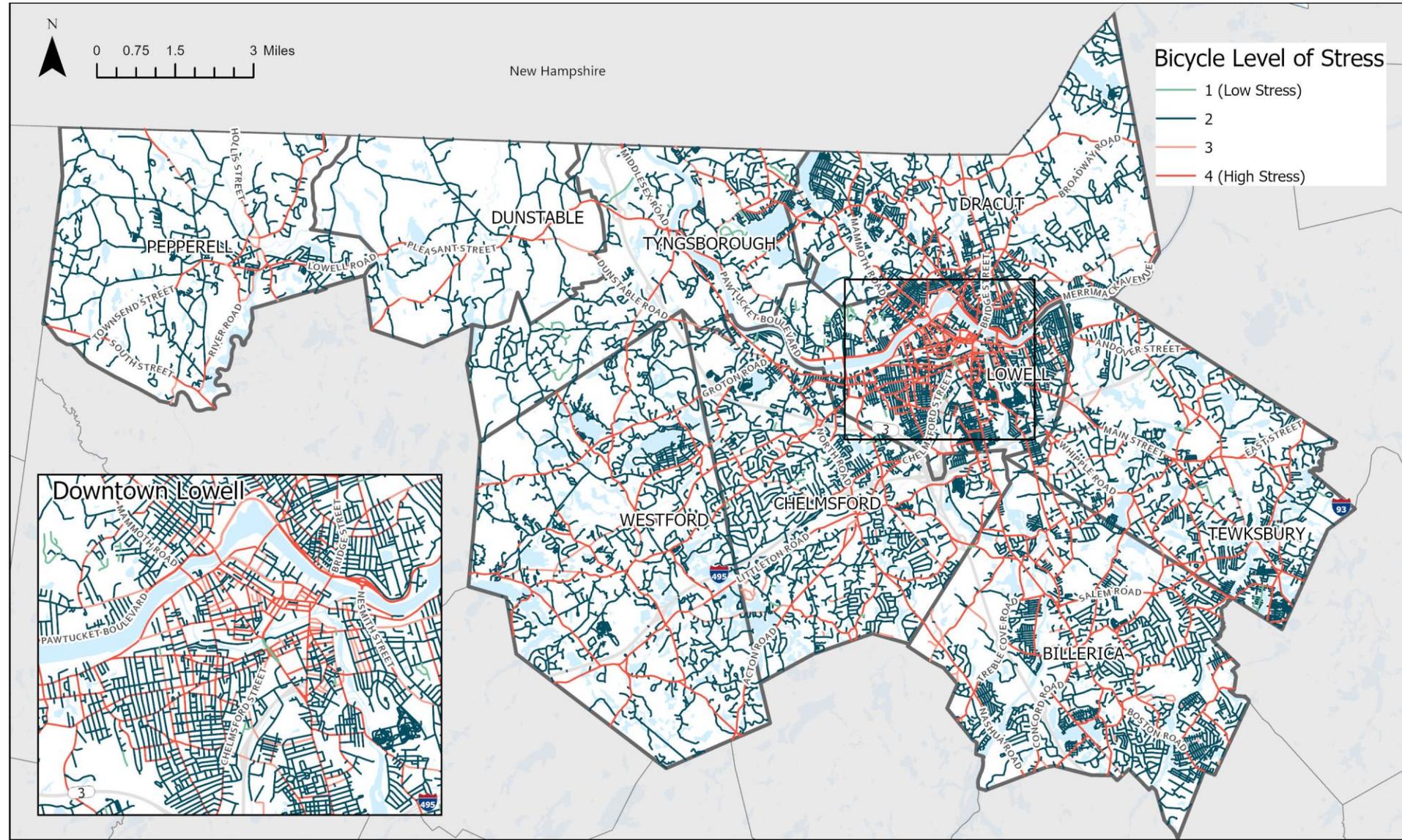
HIGH STRESS TOLERANCE

Bicycle Level of Traffic Stress (BLTS)

Bicycle Level of Stress (LTS) shows the comfort level of a person biking on a roadway in the greater Lowell Region

- LTS 1 = Low Stress
- LTS 4 = High Stress

This data is important to understand locations where bicycle facilities are needed to improve the safety and comfort of riders.



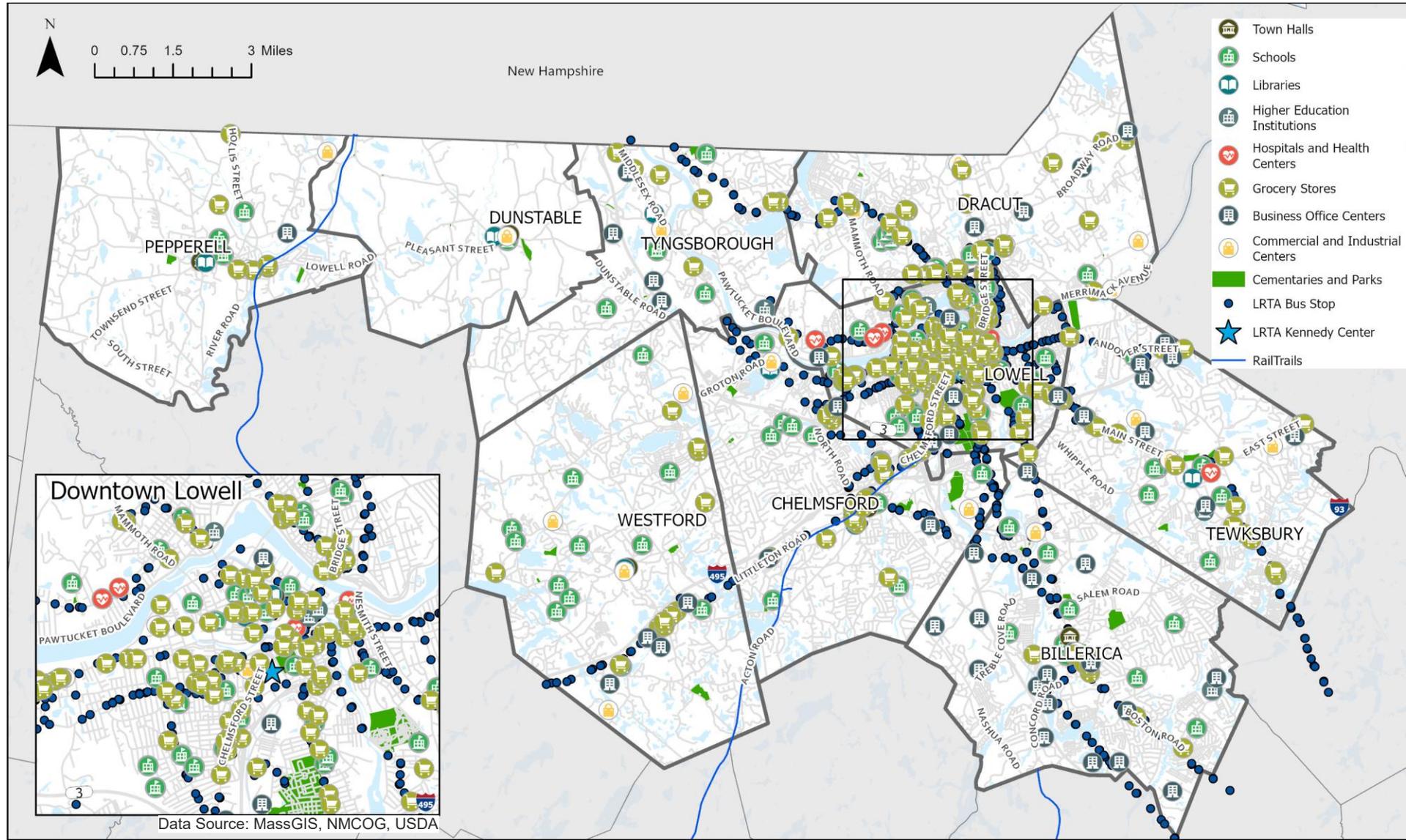
Access



Destinations

Destinations included

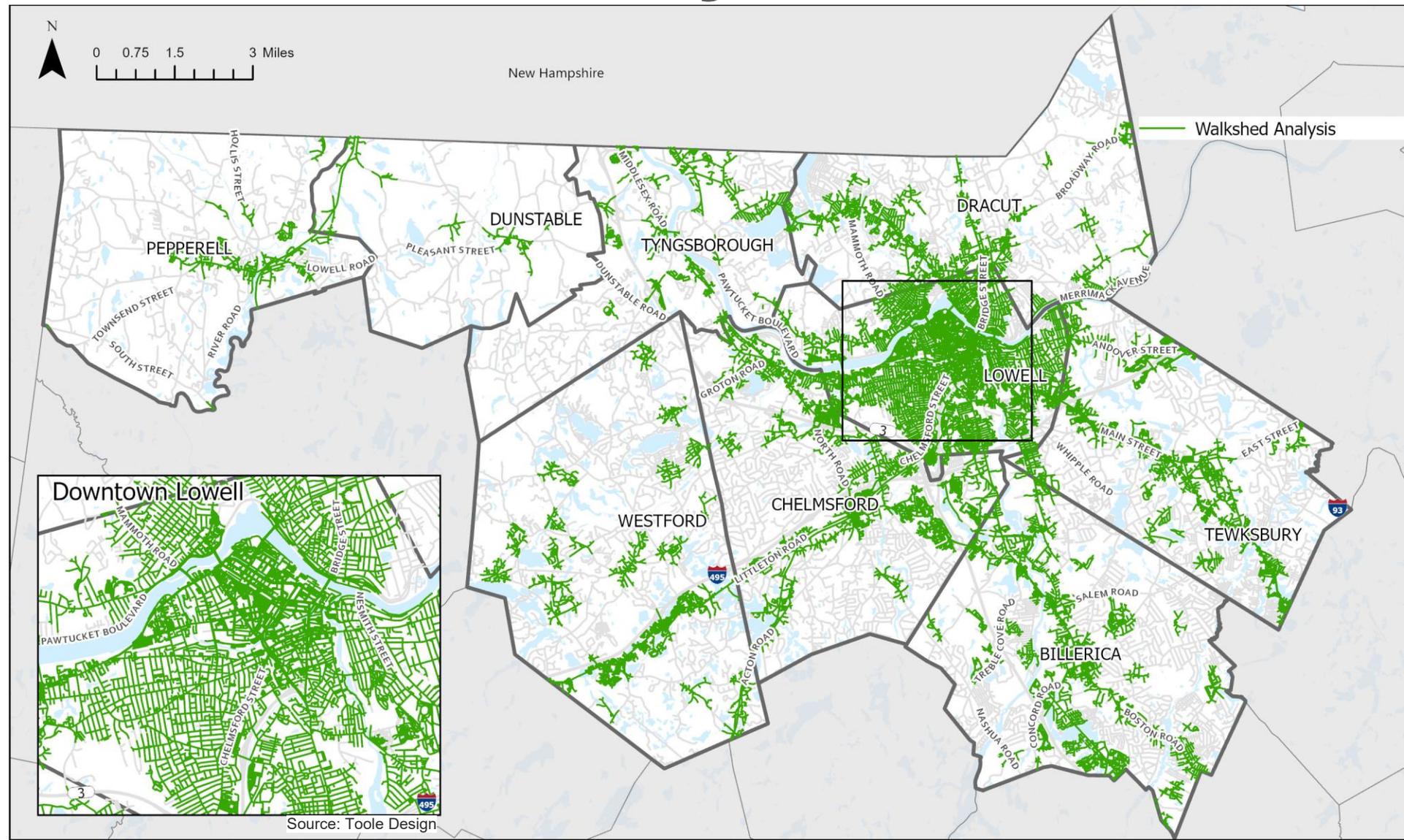
- K-12 schools
- College and universities
- Libraries & Civic Spaces
- Hospitals & Health Centers
- Grocery stores
- Retail and Town Centers / Office Centers
- Transit stops and stations
- Parks & Cemeteries
- Cultural and Community Destinations
- Rail trails and trailheads



Data Source: MassGIS, NMCOG, USDA

Pedestrian Walkshed Analysis

Using the destinations as inputs, the walkshed analysis represents the area within a ¼ mile from the destination point



Other Considerations



Other Considerations

- Trip Destinations under 3 miles
- MassDOT Potential for everyday walking and bicycling
- MassDOT bicycle and pedestrian infrastructure gaps
- Strava heatmaps of walking and bicycling activity



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DESIGN

Regional Bicycle and Pedestrian Networks



Developing a Draft Walk & Bike Network



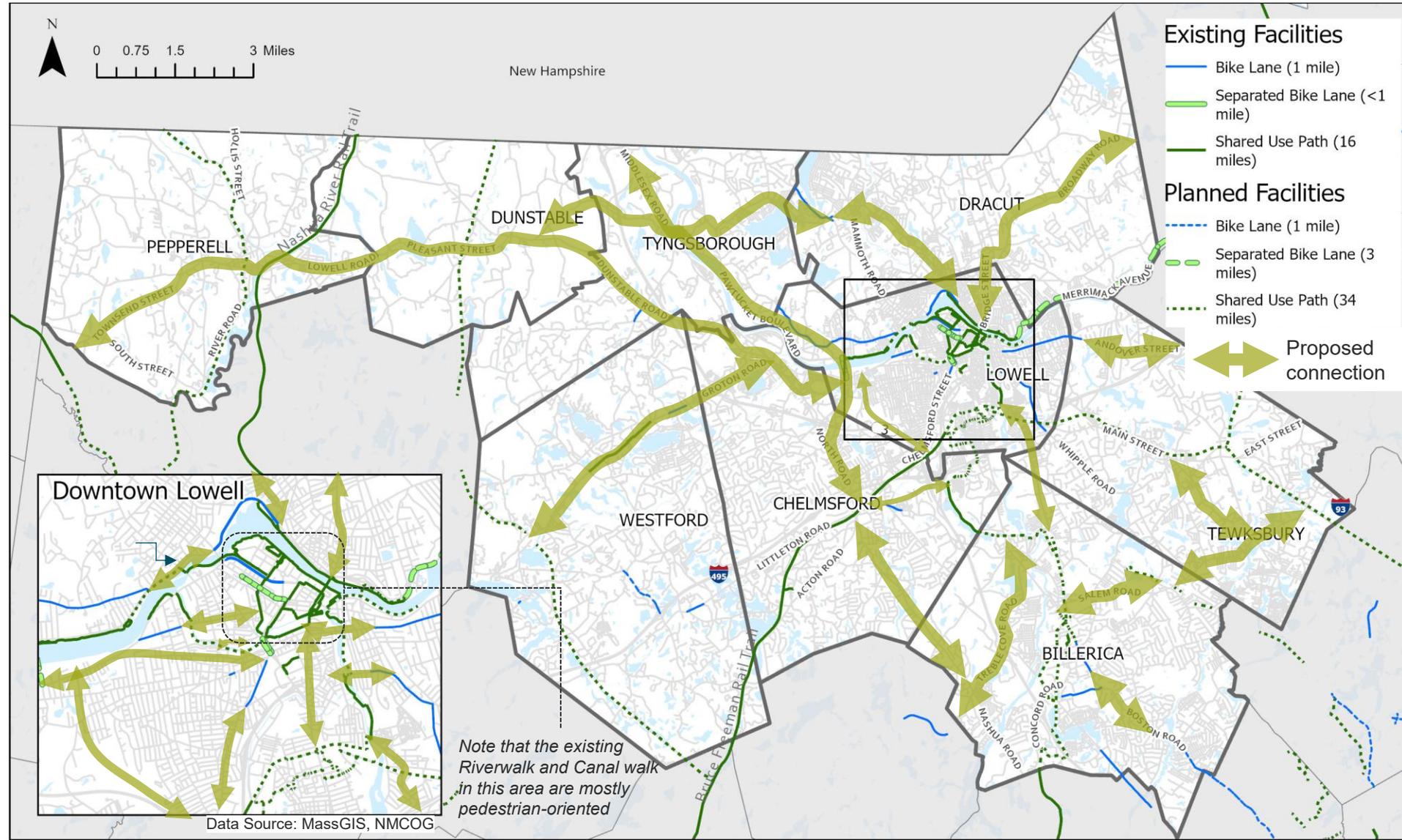
Bike: one regional network



Pedestrian: 9 discrete local networks

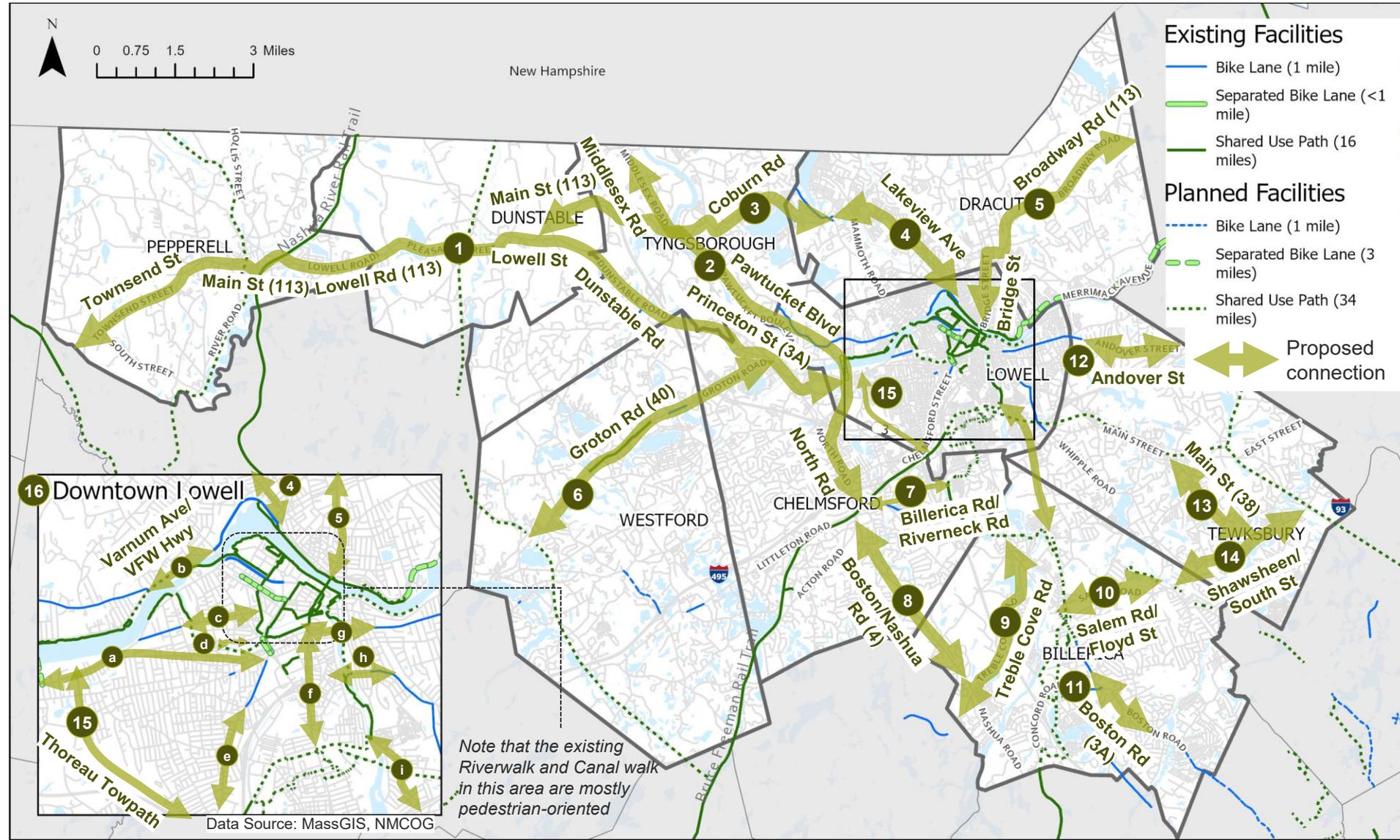
Bicycle Network

- Future network is intended to include all previously planned connections, mapped with dashed lines
- Specific roadways and treatments to be identified with future assessment and refinement



Bicycle Network

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Bicycle Network Score Card Network

#	Corridor	Equity	Comfort	Access	Safety	Engagement
	Overlaps with...	REJ+ area	High BLTS	Near destinations	High Injury Network VRU	Input points
1	Heals St-113-Dunstable Rd-Princeton St (3A)	YES	YES	YES	YES	YES
2	Middlesex Rd-Pawtucket Blvd-North Rd	YES	YES	YES	YES	YES
3	Main St (113)-Kendall Rd (113)-Curtis Rd-Coburn Rd-Tyngsboro Rd	YES	YES	YES	NO	YES
4	Lakeview Ave	YES	YES	YES	YES	YES
5	Bridge St-Broadway Rd	YES	YES	YES	YES	YES
6	Groton Rd (40)	YES	YES	YES	YES	YES
7	Billerica Rd/ Riverneck Rd	YES	YES	YES	NO	YES
8	Boston/Nashua Rd (4)	YES	YES	YES	NO	YES
9	Treble Cove Rd	YES	YES	YES	NO	YES
10	Salem Rd/ Floyd St	YES	NO	YES	NO	YES
11	Boston Rd (3A)	YES	YES	YES	YES	YES
12	Andover St	YES	YES	YES	NO	YES
13	Main St (3A)	YES	YES	YES	YES	YES
14	Shawsheen/ South	YES	YES	YES	NO	YES
15	Thoreau Towpath	YES	NEW ROW	YES	NEW ROW	YES
16	Downtown Lowell	YES	YES	YES	YES	YES

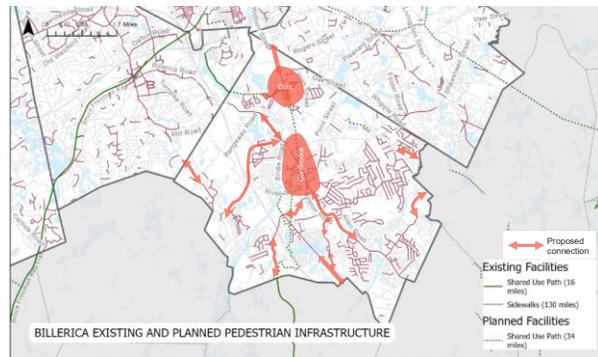
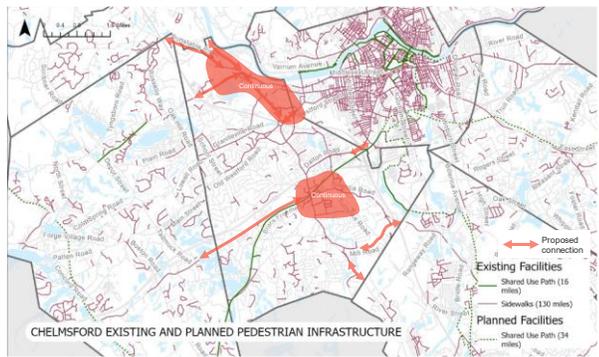
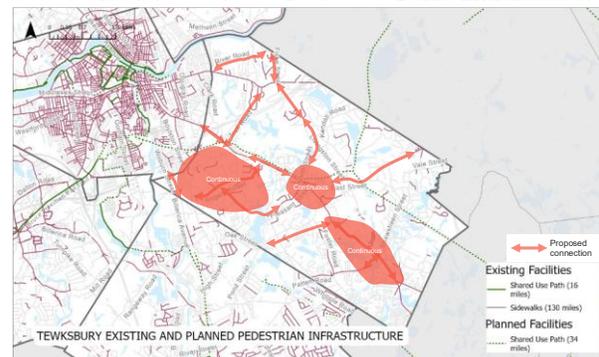
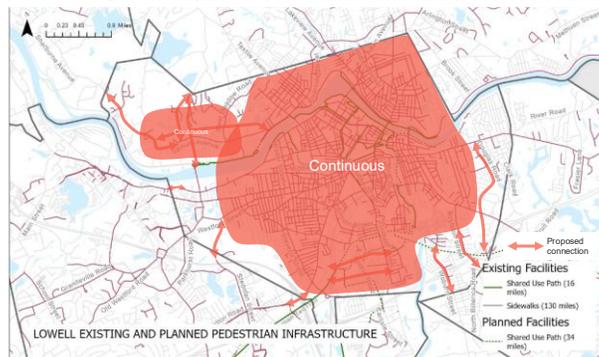
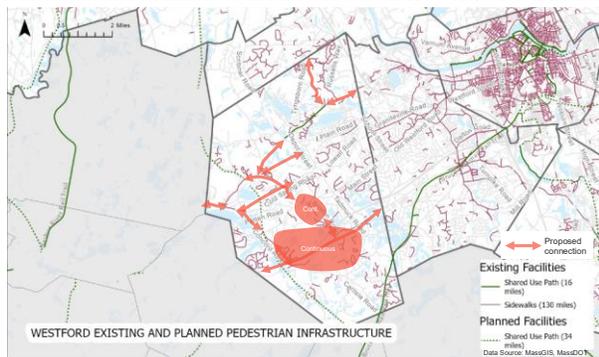
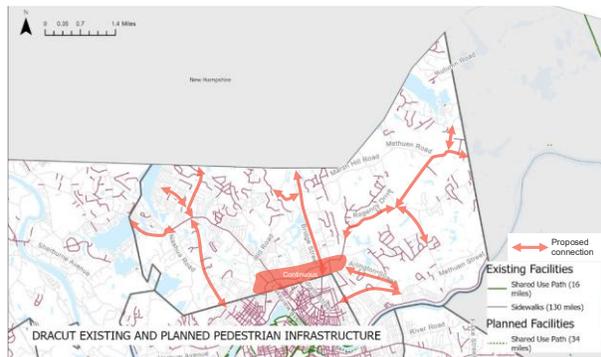
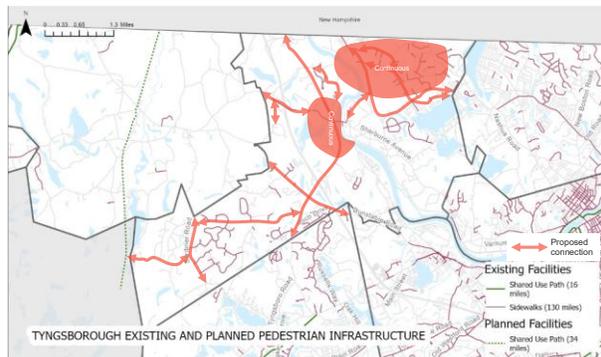
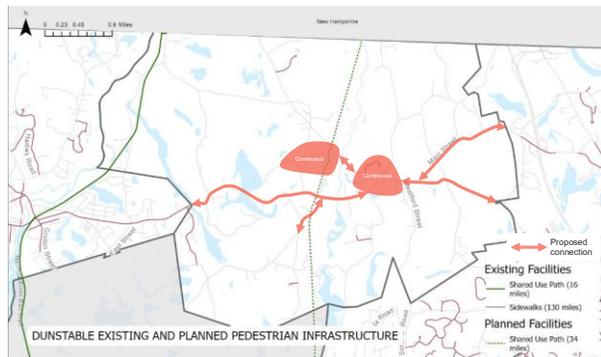
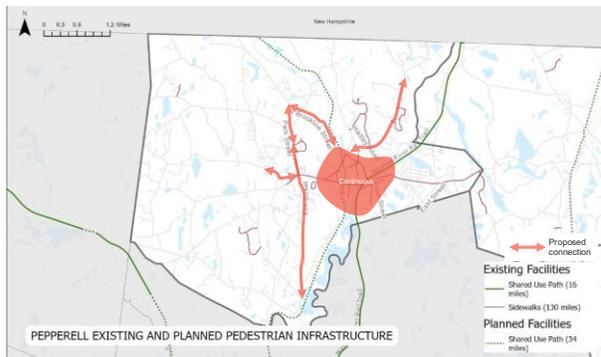
Add a Lowell score card?

Planned (dashed line) facilities to be added

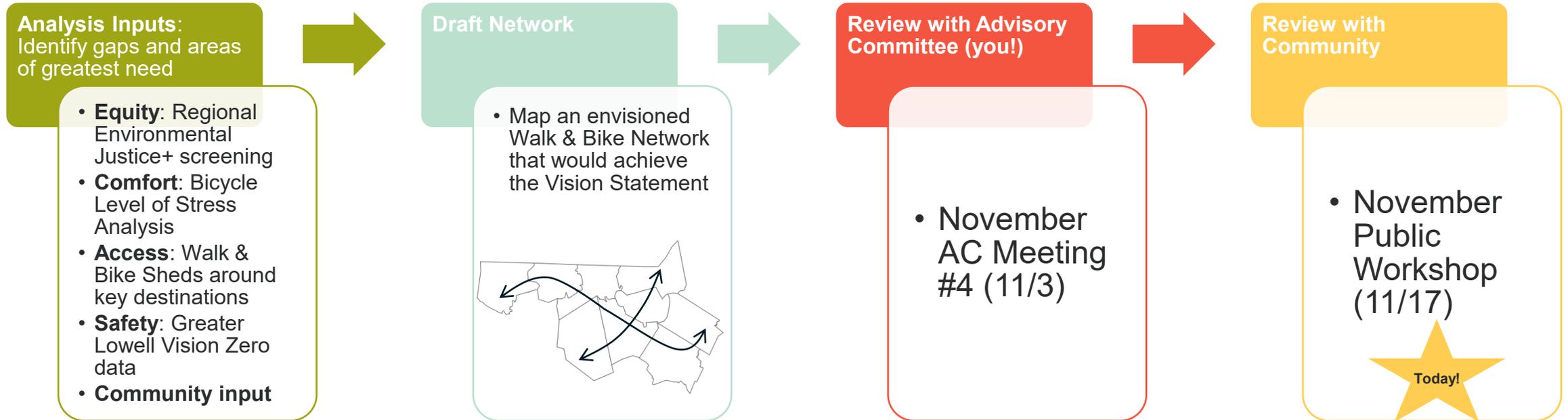
Note: this is a cursory analysis to be refined after AC feedback for use at the public workshop



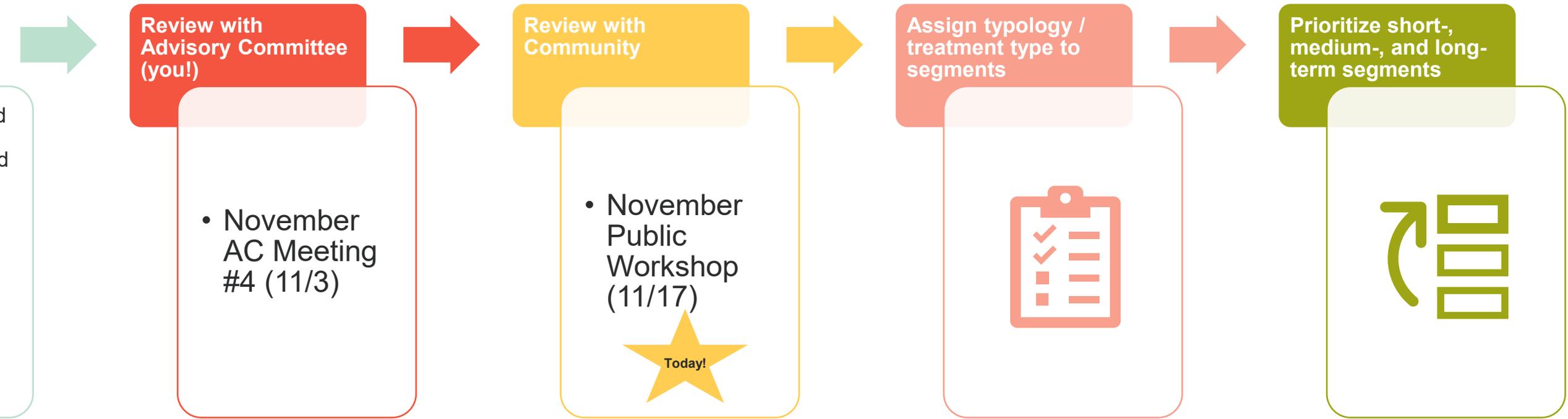
Pedestrian Networks



Next steps for the Draft Walk & Bike Network

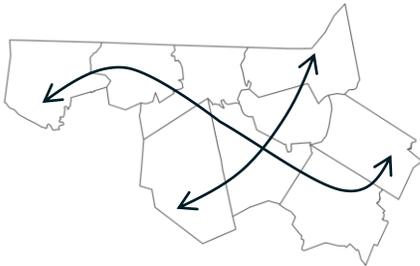


Next steps for the Draft Walk & Bike Network



We want to hear from you!

- *Map an envisioned Walk & Bike Network that would achieve the Vision Statement*



Questions:

- What do you think of the draft network(s)?
- Which connections are a priority?
- Are any connections missing?

Let's switch to the Miro

- https://miro.com/app/board/uXjv.../?share_link_id=...227

Update with
input format

Questions:

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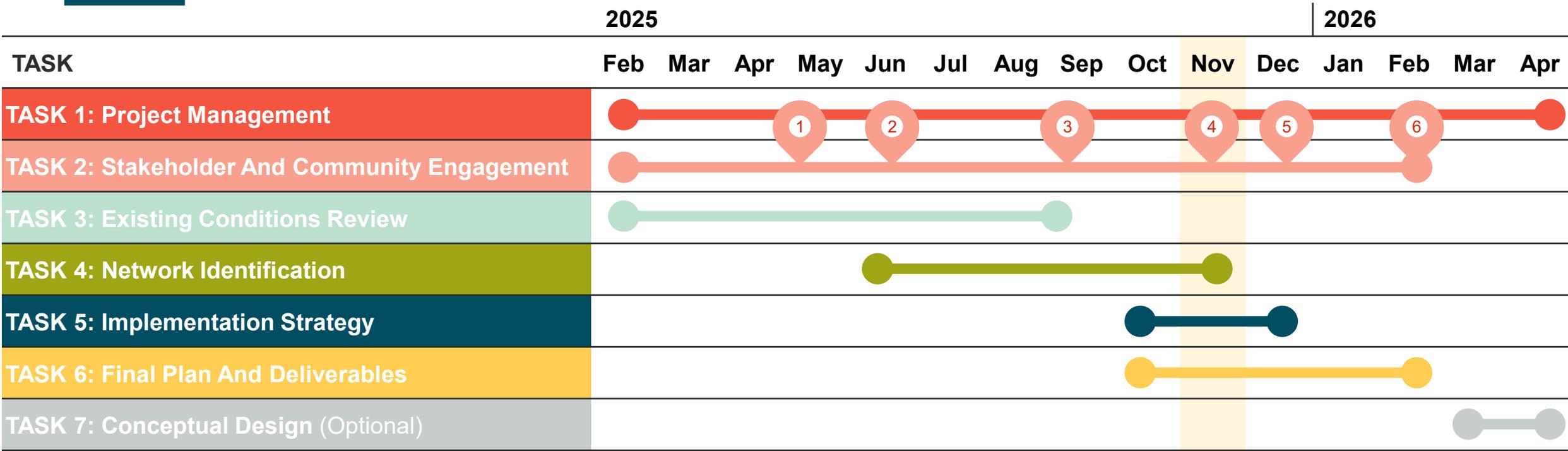


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Wrap-Up and Next Steps



Schedule



 = Advisory Committee Meetings